

CLAIMS

What is claimed is:

1. A disc brake comprising:
 - an actuation member for moving to apply a braking force;
 - a pair of pistons movable upon receipt of said braking force to force a brake pad into contact with an item to be braked;
 - an adjustment mechanism for adjusting the location of said pistons to take up clearance with wear in said brake pad; and
 - a sensor for sensing a reaction force to said braking force, and identifying a point of force application increase indicative of initial contact of said brake pad with the item to be braked, said force sensor sending a signal to an electric control for said adjustment mechanism.
2. A disc brake as set forth in claim 1, wherein said actuation mechanism is an eccentric shaft, said eccentric shaft driving at least one bearing to in turn force said pistons and said brake pad toward an item to be braked.
3. A disc brake as set forth in claim 2, wherein said sensor is located to receive a reaction force from said eccentric shaft and said eccentric shaft applying said reaction force to said bearing.

4. A disc brake as set forth in claim 3, wherein a bearing cup supports said bearing and said eccentric shaft, said force sensor being placed on an opposed side of said bearing cup from a surface that supports said bearing and said eccentric shaft.
5. A disc brake as set forth in claim 4, wherein said sensor and said bearing cup are received in a cavity in a housing for said disc brake.
6. A disc brake as set forth in claim 4, wherein said sensor has an outer cover, and a thin anvil member is placed between said outer cover and said sensor, said thin anvil transmitting said reaction force from said outer cover to said sensor, and said anvil being operable to limit a total force applied to said sensor.
7. A disc brake as set forth in claim 1, wherein said sensor is an electric sensor receiving a current and having a resistance that varies with the force applied to said sensor.
8. A disc brake as set forth in claim 7, wherein said sensor includes a protective cover between a member which applies said reaction force and an electric portion of said electric sensor which receives said current.
9. A disc brake as set forth in claim 8, wherein a relatively thin anvil is placed between said protective cover and said electric portion, said anvil transmitting force from said cover to said electric portion, and said anvil limiting the amount of total force applied to said electric portion.

10. A disc brake comprising:

an actuation mechanism for moving to apply a braking force;

a pair of pistons movable upon receipt of said braking force to force a brake pad into contact with an item to be braked;

an adjustment mechanism for adjusting the location of said pistons to take up clearance with wear in said brake pad; and

a sensor for sensing a point of force application increase indicative of initial contact of said brake pad with the item to be braked, said force sensor sending a signal to an electric control for said adjustment mechanism, said force sensor being an electric sensor receiving a current and having a resistance that varies with the force applied to said sensor.

11. A disc brake as set forth in claim 10, wherein said sensor includes a protective cover between a member which applies said force to said sensor and an electric portion of said electric sensor which receives said current.

12. A disc brake as set forth in claim 11, wherein a relatively thin anvil is placed between said protective cover and said electric portion, said anvil transmitting force from said cover to said electric portion, and said anvil limiting the amount of total force applied to said electric portion.

13. A disc brake as set forth in claim 10, wherein said actuation mechanism is an eccentric shaft, said eccentric shaft driving at least one bearing to in turn force said pistons and said brake pad toward an item to be braked.

14. A disc brake as set forth in claim 13, wherein said sensor is located to receive a reaction force from said eccentric shaft and said eccentric shaft applying said reaction force to said bearing.

15. A disc brake as set forth in claim 14, wherein a bearing cup supports said bearing and said eccentric shaft, said force sensor being placed on an opposed side of said bearing cup from a surface that supports said bearing and said eccentric shaft.

16. A disc brake as set forth in claim 15, wherein said sensor and said bearing cup are received in a cavity in a housing for said disc brake.

17. A disc brake as set forth in claim 12 wherein said anvil is a compliant member whose deformation is limited by the recess in the bearing cup/housing structure.

18. A disc brake comprising:

an actuation mechanism for moving to apply a braking force;

a pair of pistons movable upon receipt of said braking force to force a brake pad into contact with an item to be braked, said actuation mechanism including an eccentric shaft, said eccentric shaft driving at least one bearing to in turn force said pistons and said brake pad toward the item to be braked, a bearing cup supporting said bearing and said eccentric shaft, said bearing cup received in a cavity in a housing for said disc brake;

an adjustment mechanism for adjusting the location of said pistons to take up clearance with wear in said brake pad; and

a sensor for sensing a point of force application increase indicative of initial contact of said brake pad with the item to be braked, said force sensor sending a signal to an electric control for said adjustment mechanism, said force sensor being an electric sensor receiving a current and having a resistance that varies with the force applied to said sensor, said sensor being positioned between said bearing cup and said cavity of said housing, said sensor being an electric sensor receiving a current and having a resistance that varies with the force applied to said sensor.

19. A disc brake as set forth in claim 18, wherein said sensor includes a protective cover between said bearing cup and an electric portion of said electric sensor which receives said current.

20. A disc brake as set forth in claim 19, wherein a relatively thin anvil is placed between said protective cover and said electric portion, said anvil transmitting force from said cover to said electric portion, and said anvil limiting the amount of total force applied to said electric portion.